Asthma in New Jersey

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NEW JERSEY DEPARTMENT HEALTH SENIOR SERVICES

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Asthma
in New Jersey

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Acknowledgements

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Key Findings

Asthma Prevalence

- Among adults, 18 years of age or older, surveyed by the New Jersey Behavioral Risk Factor Surveillance Survey in 2000, 8.7 percent said that they had been diagnosed as having asthma, and 6.2 percent currently have asthma. Based on these findings, it is estimated that between 341,000 and 449,000 adults in New Jersey currently suffer from asthma.

Asthma Hospitalization

- In 1999, there were more than 14,000 New Jersey hospitalizations with asthma as the primary diagnosis (180 hospitalizations per 100,000 population). Asthma hospitalizations represent approximately one of every 100 hospitalizations.

- Black non-Hispanic and Hispanic New Jersey residents are more likely to be hospitalized with asthma than white non-Hispanic residents. Non-Hispanic blacks are four times more likely than non-Hispanic whites to be hospitalized for asthma. Hispanics are almost three times more likely than non-Hispanic whites to be hospitalized for asthma. In 1999, Black non-Hispanic and Hispanic residents accounted for over half of all admissions for asthma.

- From 1985 to 1999, age-adjusted hospitalization rates for asthma have declined. The asthma hospitalization rate has declined for all race/ethnicity groups, but it has declined more for non-Hispanic whites and Asians than for non-Hispanic blacks and Hispanics.

- Children are more likely to be hospitalized with asthma than adults. The highest asthma hospitalization rate is for children under five years of age. Between 1985 and 1999, the asthma hospitalization rate increased in the population under age five by nearly 12%. All other age groups showed decreases for the same period.

- Overall, women have higher asthma hospitalization rates than men. However, there is significant variation by age. Adult women have much higher asthma hospitalization rates than men, but, among children, boys have higher asthma hospitalization rates than girls, particularly among children under five years of age.

Asthma Mortality

- Death from asthma is uncommon. In 1999, 80 New Jersey residents died from asthma.

- The age-adjusted asthma mortality rate for New Jersey is lower than the rate for the United States as a whole.

- Black non-Hispanic New Jersey residents are more likely to die from asthma than white non-Hispanic residents.

- Older New Jersey residents are more likely to die from asthma than younger New Jersey residents.

- Asthma mortality rates are steady or declining for all age groups.

List of Figures and Tables

Introduction

What is Asthma?

Asthma is a chronic disease of airway inflammation that makes breathing difficult. Symptoms include shortness of breath, chest tightness, wheezing and coughing. Children and adults with asthma have episodes, or attacks, when it is difficult for them to breathe. The airway muscles tighten and the airway lining swells, making the airways very narrow. These episodes usually occur in response to a viral infection such as a cold or in response to other "triggers" such as allergens, irritants or exercise.

It is not understood why or how the airways become abnormally sensitive. The cause of asthma is not known, but it tends to run in families.

Impact and Severity of Asthma

Asthma is one of the most common chronic conditions in our nation and one of the most serious chronic illnesses of children. The U.S. Centers for Disease Control and Prevention has estimated that there are 540,000 persons with asthma in New Jersey.[1] The U.S. Department of Health and Human Services' *Healthy People 2010: Objectives for Improving Health* established a goal in the area of respiratory disease to "reduce asthma morbidity, as measured by a reduction in hospitalizations". [2]

Uncontrolled asthma can be expensive. The Asthma and Allergy Foundation of America estimated that asthma costs New Jersey more than $323 million each year.[3] Children use more medications when their asthma is not controlled than when it is stable. Adolescents may be more aware of their symptoms than are younger children, but they may underestimate the severity of their symptoms. Disturbed sleep from nighttime asthma symptoms can decrease productivity at school for children and at work for parents. In older people, asthma may be confused with other chronic lung diseases such as emphysema or chronic bronchitis.

Preventing Asthma Attacks

The number and severity of asthma attacks can be reduced by avoiding triggers and by taking prescribed preventive medicine every day. Furthermore, a written action plan outlining recommended medications and detailing proper self-management steps can reduce the number of severe attacks when coupled with regular assessment and monitoring. The aim of asthma therapy is to maintain control of asthma with the least amount of medication and with minimal risk for adverse effects.

[1] "Forecasted State-Specific Estimates of Self-Reported Asthma Prevalence –United States 1998", Morbidity and Mortality Weekly Report, December 14, 1998

[2] "Healthy People 2010 Objectives", U.S. Department of Health and Human Services

[3] Asthma and Allergy Foundation of America website. Estimates based on "Trends in the Costs of Asthma in the United States, 1985-1994", Journal of Allergy and Clinical Immunology, September 2000

Epidemiology of Asthma in New Jersey

The New Jersey Department of Health and Senior Services (NJDHSS) initiated the New Jersey Asthma Surveillance Project in the Fall of 2000 to develop a statewide asthma surveillance system. The Child and Adolescent Health Program within the Division of Family Health Services is establishing the New Jersey Asthma Surveillance Project. The project is funded by the Centers for Disease Control and Prevention grant "Addressing Asthma from a Public Health Perspective". The purpose of the project is to tabulate and report existing surveillance data concerning asthma and to develop new surveillance methods and reports. The asthma surveillance project has also included data from hospital discharges, vital records, and occupational disease reports. The surveillance data will support the coordination of resources for asthma treatment and measurement of progress toward achieving both the *Healthy New Jersey 2010* and the national *Healthy People 2010* goals of reduced asthma hospitalizations and reduced deaths.

Prevalence of Asthma in New Jersey

Results from the National Health Interview Survey indicate the prevalence of asthma in the United States increased 75% from 1980 to 1994.[4] However, New Jersey has little state-specific data on asthma prevalence among its residents. Accurate estimates of asthma incidence and prevalence are difficult to measure due to the problems in defining the disease among infants and young people.

In 2000, the Behavioral Risk Factor Surveillance Survey (BRFSS), a random digit dialing telephone survey, was revised to include questions about asthma. This survey of self-reported asthma provides an estimate on statewide prevalence of asthma. Estimates on the asthma status of New Jersey adults (aged 18 and over) were available for the first time in the 2000 New Jersey BRFSS. Among the adults answering the survey, 8.7 % said that they had ever been told by a doctor that they had asthma, and 6.2% said that they currently have asthma. Extrapolating the survey results to the entire population of the State, it is estimated that between 7.7 and 9.8% of adults in New Jersey have ever had asthma, and between 5.4 and 7.1% currently have asthma. Given that the State's population age 18 years and older in the 2000 Census was 6,326,792, the aforementioned percentages translate into 487,163 to 620,026 New Jersey residents as ever having asthma, and 341,647 to 449,202 New Jersey residents as currently having asthma.[5]

Nationally, the 2000 BRFSS indicates an estimated 14.6 million (7.2%) adults had current asthma in the United States.

[4] "Self-Reported Asthma Prevalence Among Adults—United States, 2000", *MMWR*, August 17, 2001, 50(32), pp 682-6

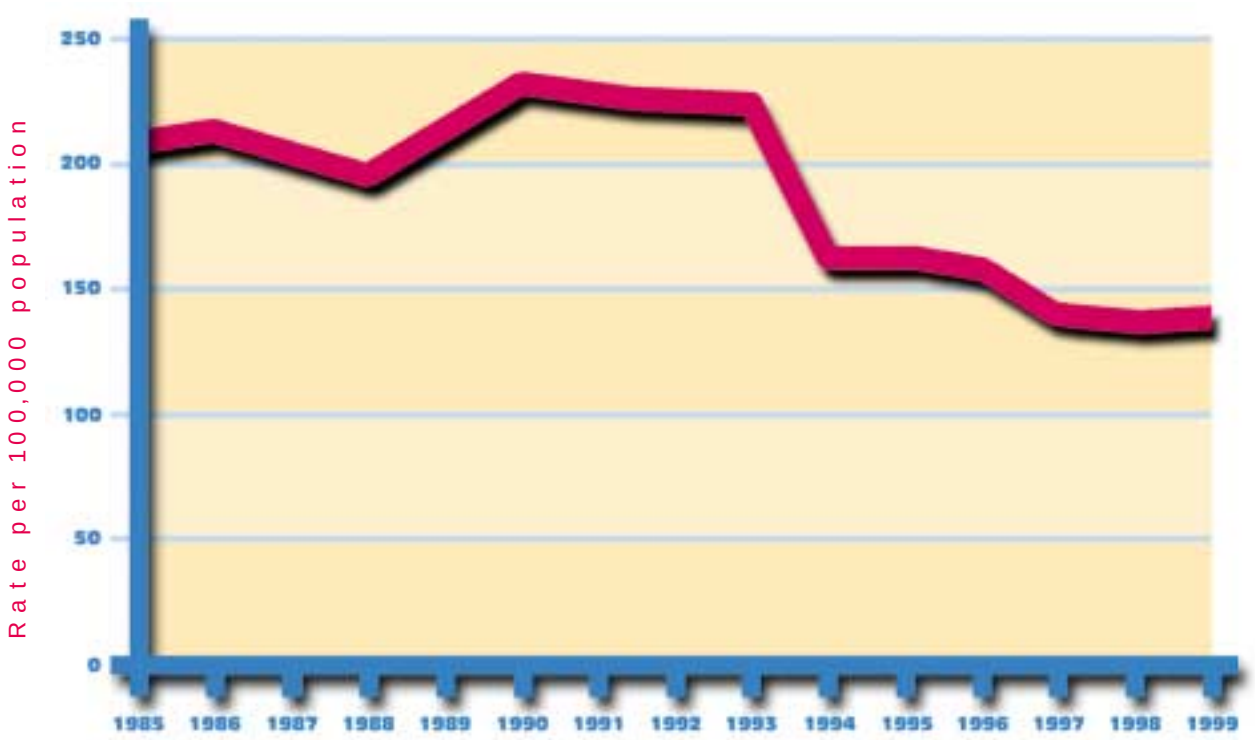
[5] U.S. Census Bureau, Census 2000 Profile of General Demographic Characteristics from www.wnjpin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi25/sf1/index.html

Morbidity-Asthma Hospitalizations, 1985-1999

Most asthma attacks are successfully managed without hospitalization. Hospitalization rates measure an infrequent, severe outcome of this disease.[6] However, hospitalization rates are not indicators of asthma prevalence. Asthma hospitalizations are analyzed by health officials and program planners to identify populations most at risk for severe asthma morbidity. From 1985 to 1999, age-adjusted hospitalization rates for asthma have declined. However, asthma hospitalizations represent approximately 1 of every 100 hospitalizations. (Figure 1)

Figure 1

Trends in Asthma Hospitalization Rates Age-Adjusted, New Jersey, 1985-1999



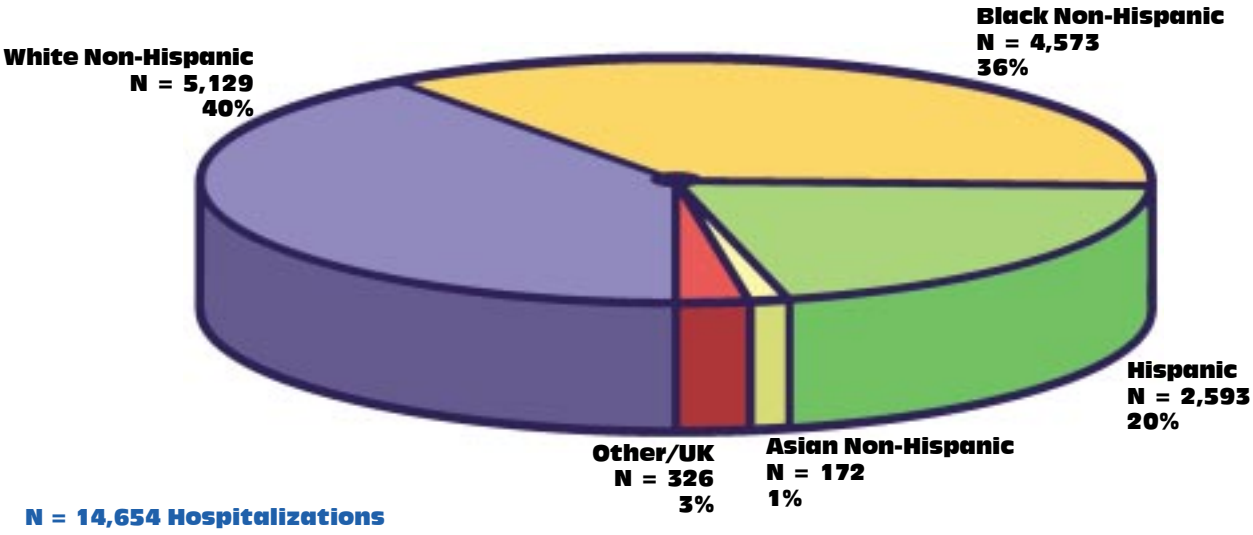
[6] Nimmagadda, S.R., Evans, R., Allergy: Etiology and Epidemiology, Pediatrics in Review, 20 (4), April 1999, p. 111

Race/Ethnicity-Specific Hospitalizations

In total there were 14,654 hospital admissions for asthma among New Jersey residents during 1999. Black non-Hispanic and Hispanic admissions accounted for over half of all admissions for asthma. (Figure 2)

Figure 2

Percent Distribution of Asthma Hospitalizations by Race/Ethnicity, New Jersey, 1999



N = 14,654 Hospitalizations

The high rates experienced by specific race/ethnicity groups in individual counties (Table 1) such as Camden, Essex, and Passaic reflect the concentration of such groups within the urban areas of New Jersey.

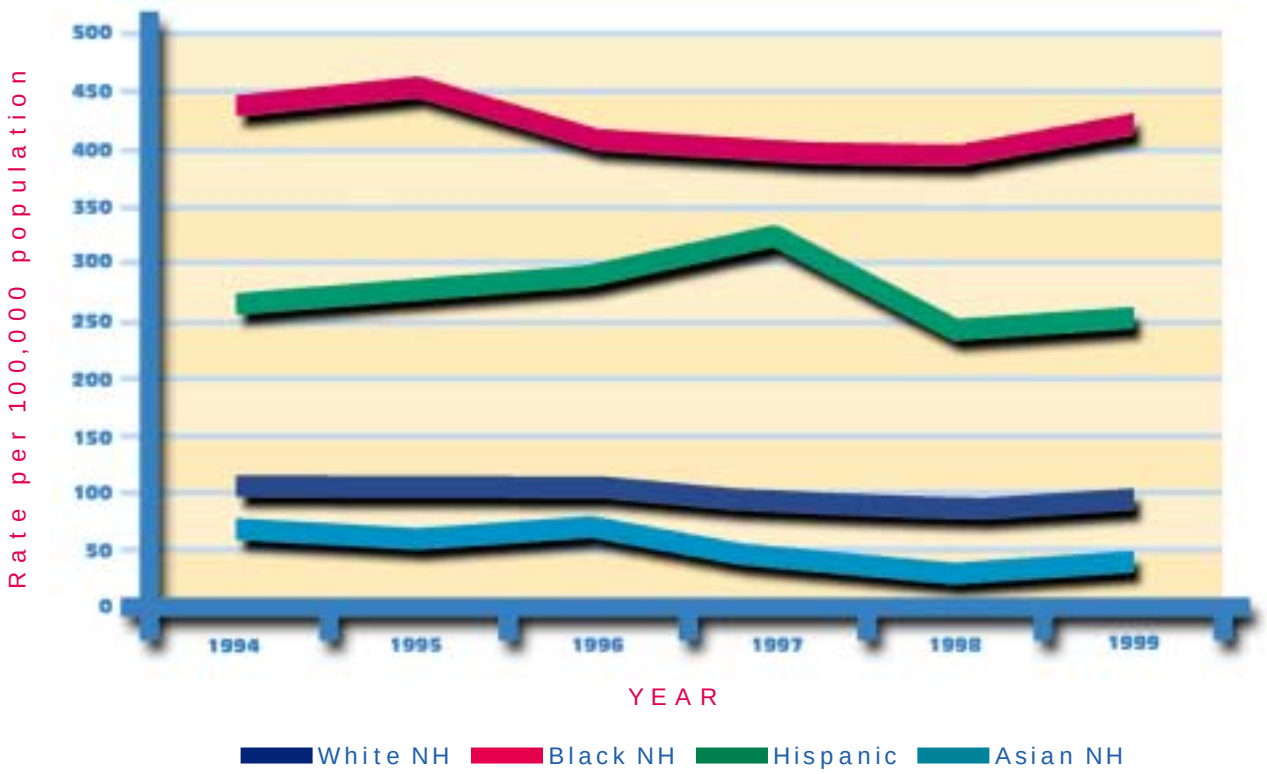
Although hospitalization data in this report are presented from 1985 forwards, due to a 1993 change adding Hispanic ethnicity, the data on asthma hospitalizations from 1985 to 1992 are not directly comparable to years 1993 forward upon the basis of race/ethnicity.

In 1999, the asthma hospitalization rate in non-Hispanic whites was 92 per 100,000 persons. This represents a 13% decrease from the rate reported for 1994. The hospitalization rate in non-Hispanic blacks in 1999 was 423 per 100,000 persons, an almost 4% decrease from the 1994 rate. Between 1994 and 1999, the rate for Hispanics decreased 5%, 252 per 100,000 persons, while the rate for non-Hispanic Asians dropped 45% over the same period to a rate of 31 per 100,000 persons.

Non-Hispanic blacks are four times more likely than non-Hispanic whites to be hospitalized for asthma. Hispanics are almost three times more likely than non-Hispanic whites to be hospitalized for asthma. (Figure 3)

Figure 3

Trends in Asthma Hospitalizations by Race/Ethnicity, New Jersey, 1994-1999



Age-Specific and Sex-Specific Hospitalizations

The risk for hospitalization varies considerably by age and sex. Children have disproportionately higher asthma hospitalization rates, especially among boys under five years of age. Boys continue to have higher rates than girls aged 5-19. After age 20, women experience higher rates. (Figure 4)

In New Jersey, hospitalization rates for asthma of both sexes between 1985 and 1999 increased in the population under age 5 by nearly 12%. All other age groups showed decreases for the same period. The largest decreases in rate were 30% for age 5-19 and 32% for age 65 plus. (Figure 5) These decreases are significant. Forty-two percent of asthma hospitalizations in 1999 were in those under age 20, an age category comprising only 27% of the total state population. (Figure 6)

Figure 4

Asthma Hospital Rates by Age and Sex, New Jersey, 1999

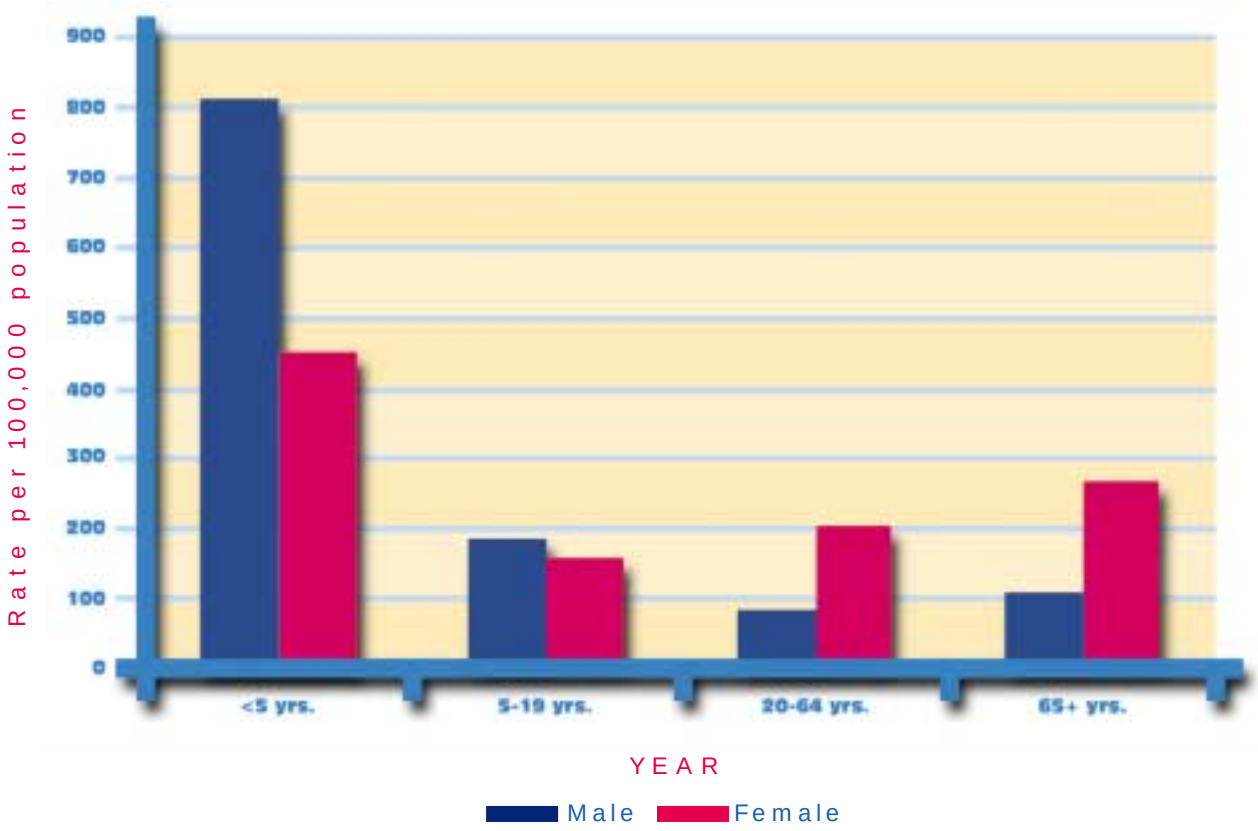


Figure 5

Trends in Asthma Hospitalization Rates by Age, New Jersey, 1985-1999

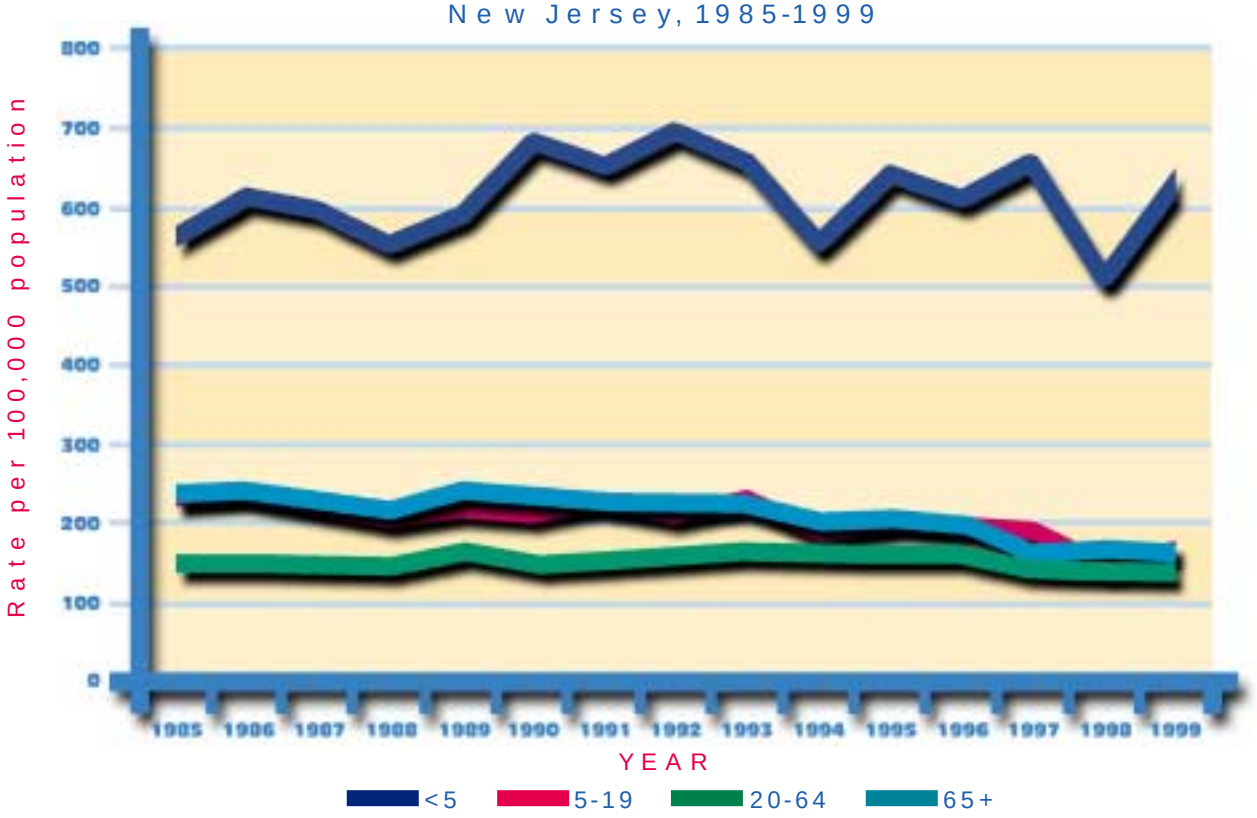
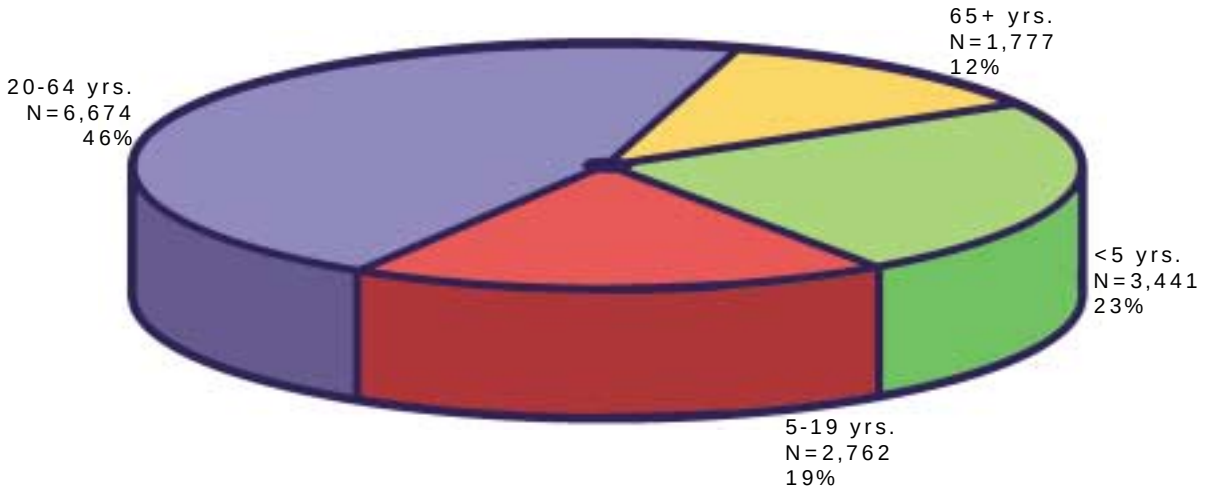


Figure 6

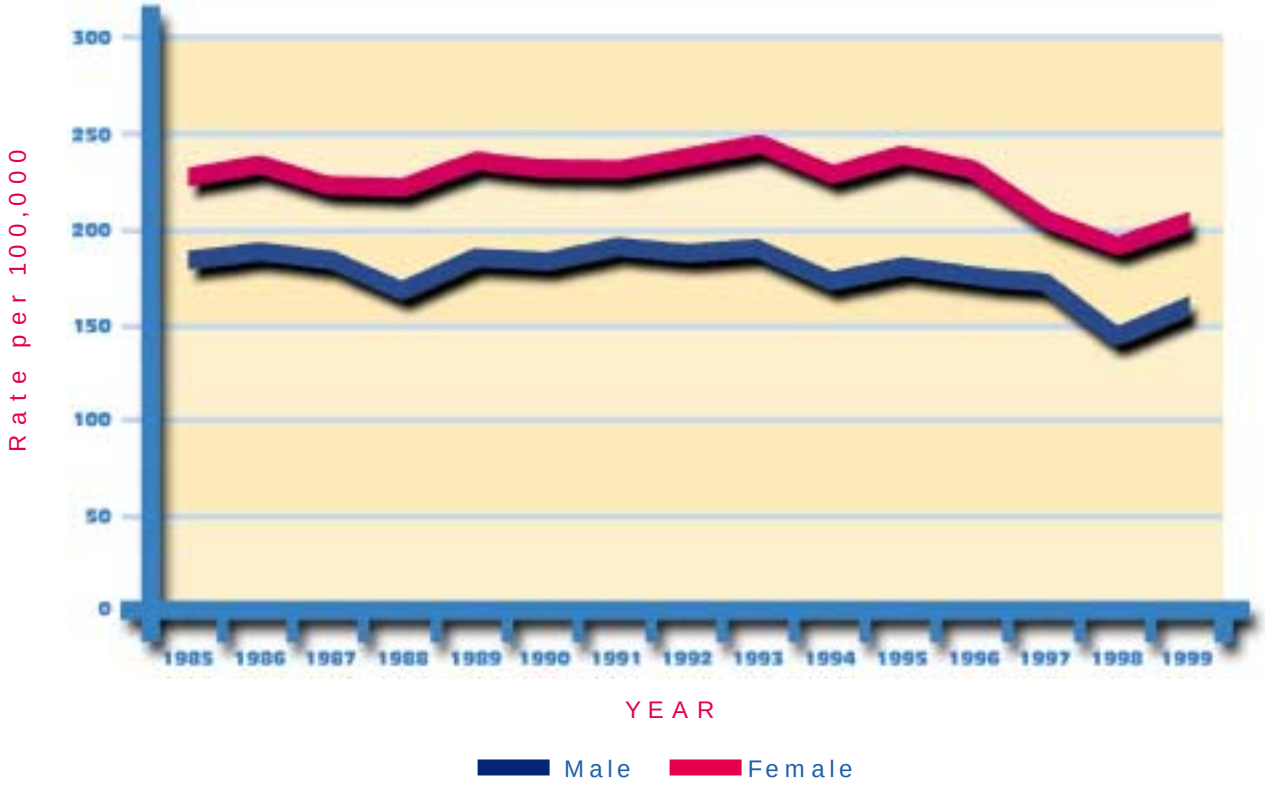
Percent Distribution of Asthma Hospitalizations by Age Group, New Jersey, 1999



In New Jersey when all ages are considered together, females have consistently experienced higher rates of hospitalization for asthma than have males. Hospitalization rates for males were 158 per 100,000 males and 201 per 100,000 females for 1999. Between 1985 and 1999, the rates decreased 14% for males and 12% for females in New Jersey. (Figure 7)

Figure 7

Trends in Hospitalization Rates by Sex, New Jersey, 1985-1999



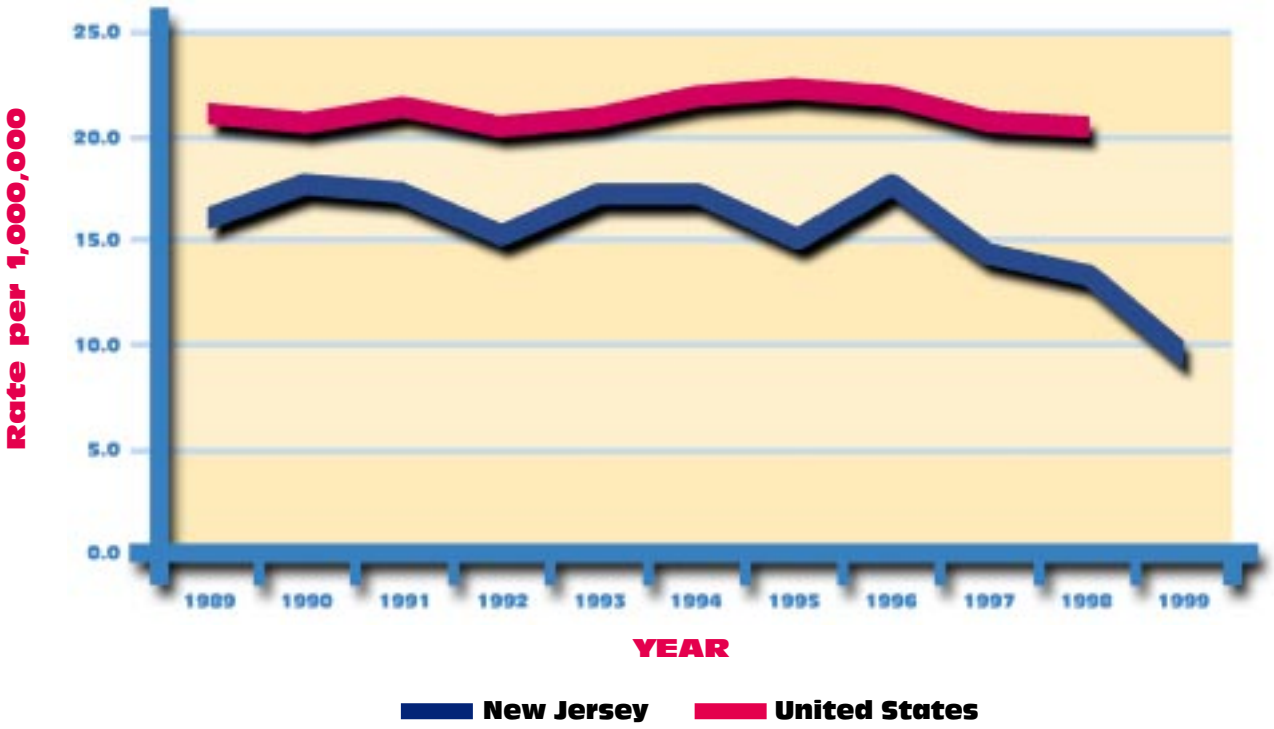
Asthma Mortality, 1989-1999

Death from asthma is uncommon. In the eleven years from 1989 through 1999, annual asthma deaths accounted for less then 20 deaths per 1,000,000 population. The 1998 age-adjusted death rate for asthma in New Jersey (13.4 per million population), nearly matched the most recently reported overall United States rate in 1998 of 14 per million.[7] In 1999, the New Jersey age-adjusted death rate for asthma decreased to 9.3 per million. (Figure 8)

Overall, the age-adjusted death rate remained relatively constant from 1989 (16.1 per million) through 1996 (17.6 per million). From 1996 to 1999, the age-adjusted death rate decreased from 17.6 per million to 9.3 per million, a 47% change from the 1996 rate. The number of deaths with asthma certified as the underlying cause increased from 111 in 1989, to a peak of 146 in 1996, then declined to 80 by 1999.

Figure 8

Trends in Asthma Mortality Rate, Age-Adjusted, United States 1989-1998 New Jersey 1989-1999



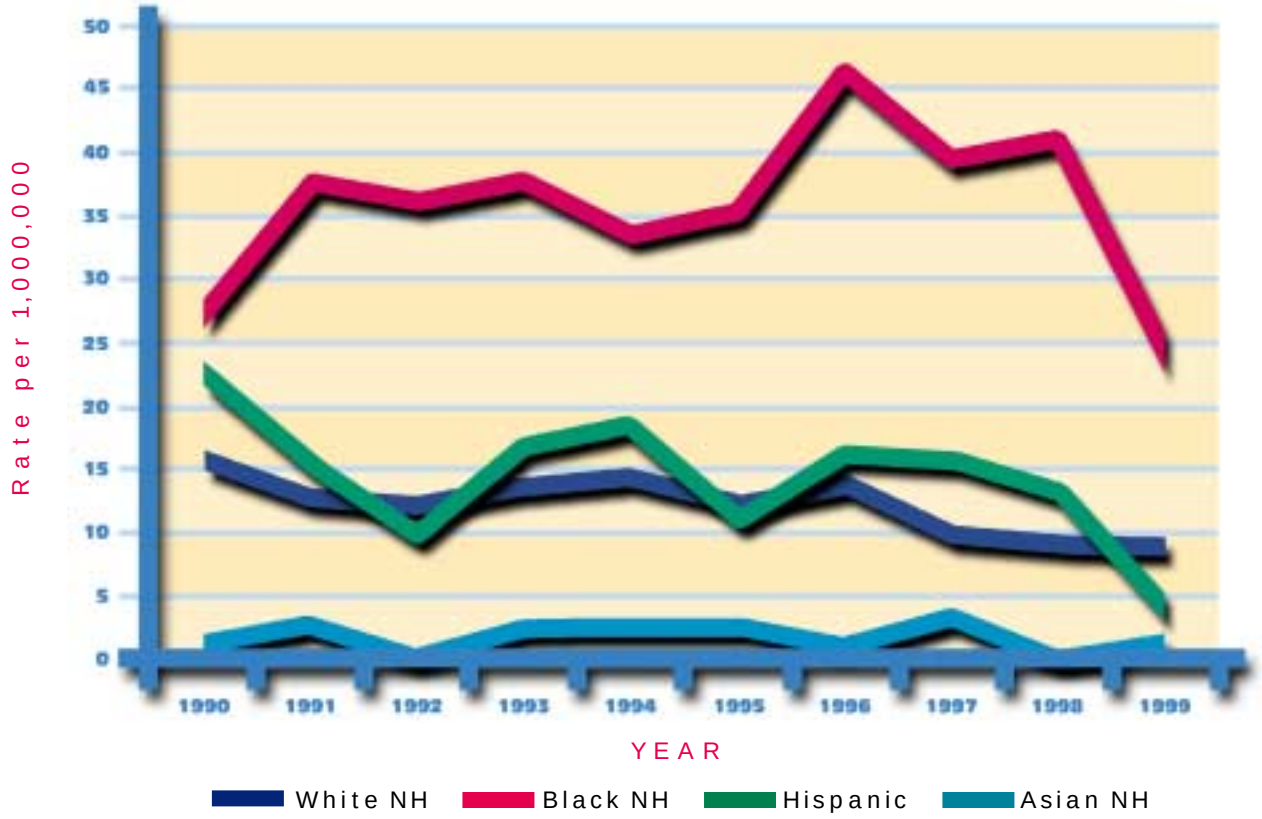
[7] "Lung Disease State by State" CDC Wonder: State-Specific Mortality Data, 1998

Race/Ethnicity-Specific Mortality

While the death rates for asthma are trending downward for all racial/ethnic groups, the disparity between non-Hispanic whites and non-Hispanic blacks has remained substantial. This mirrors national level data indicating that blacks have consistently higher death rates than whites. Between 1990 and 1999, non-Hispanic blacks have consistently experienced a death rate for asthma that was between three and four times greater than non-Hispanic whites. (Figure 9)

Figure 9

Trends in Asthma Mortality by Race/Ethnicity, New Jersey 1988-1999

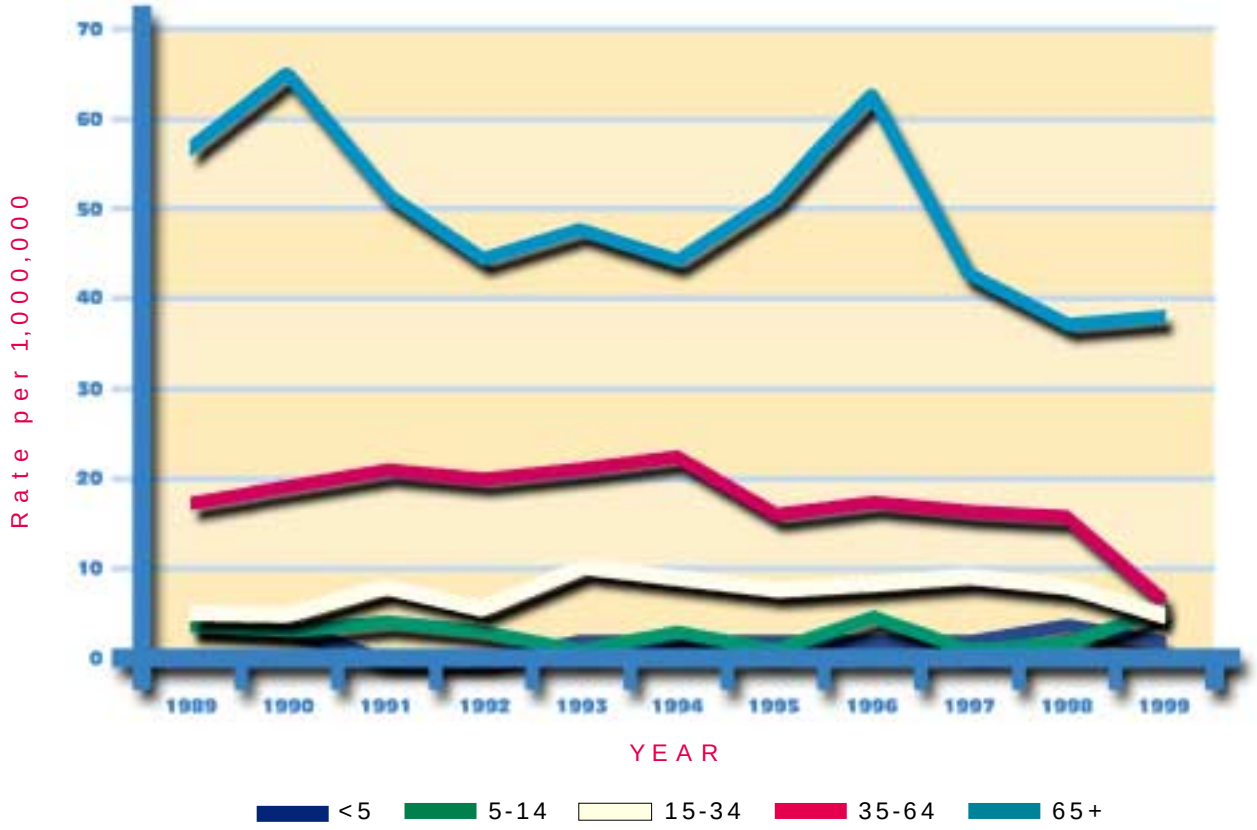


Age-Specific and Sex-Specific Mortality

Consistent with national data, New Jersey asthma death rates are highest for those individuals age 65 years and above and lowest for those under the age of 5 years. Over the 11-year period of available data, asthma deaths in all age classes have trended downwards. Just over 4 percent of total asthma deaths from 1989 to 1999 occurred in children under the age of 18. (Figure 10)

Figure 10

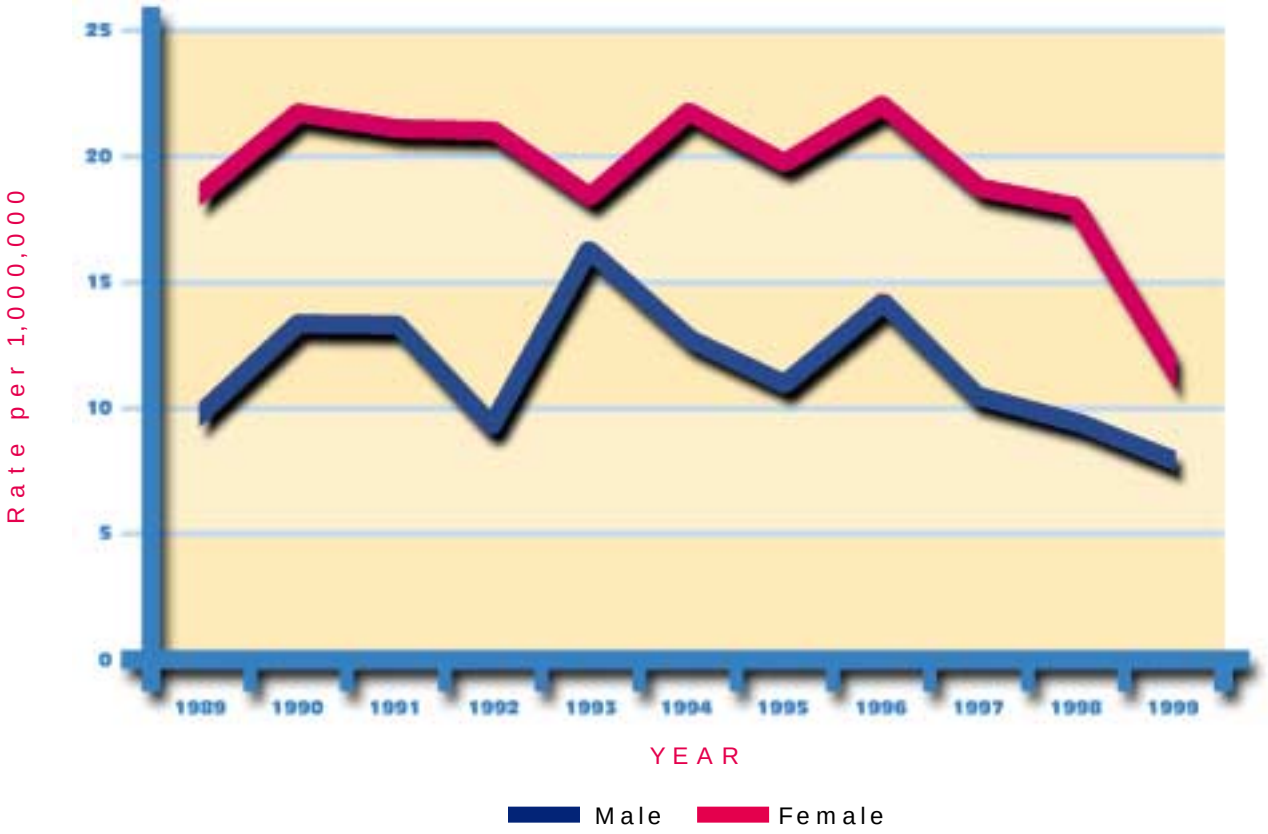
Trends in Asthma Mortality by Age Group, New Jersey, 1989-1999



The New Jersey death rate for asthma among females is consistently greater than among males over the 11-year period of available data. (Figure 11)

Figure 11

Trends in Asthma Mortality by Sex, New Jersey, 1989-1999



Occupational Asthma in New Jersey

Occupational asthma is a disease resulting from an exposure to a chemical or biological agent in the workplace. Occupational asthma can develop in three general ways: 1) after a period of exposure to a sensitizing agent; 2) immediately following a single high exposure to an irritant; or 3) after a period of continual, low level exposure to an irritant. Although many workers show improvement when removed from the exposure to the causative agent, episodes of asthma can continue even after workplace exposure is eliminated. Studies have indicated that between 5 and 20% of adult asthma may be attributable to workplace exposures.

Hundreds of substances have been associated with occupational asthma, including isocyanates, anhydrides, epoxy resins, certain animal proteins, plant products, and cleaning agents. Occupational exposure to many of these agents is not specifically regulated by the Occupational Safety and Health Administration (OSHA) and even when they are, workplace limits are often not low enough to prevent sensitization of exposed workers.

The Occupational Health Surveillance Program (OHS), located in the New Jersey Department of Health and Senior Services, has been conducting surveillance of occupational disease in New Jersey since 1984. In 1988, the Centers for Disease Control's National Institute for Occupational Safety and Health created the Sentinel Event Notification System for Occupational Risks (SENSOR) Program. SENSOR is a state-based surveillance system to target work-related health conditions. New Jersey, California, Massachusetts, and Michigan are the four states currently conducting surveillance of occupational asthma. The components of the SENSOR asthma model include case ascertainment and follow-up, worksite intervention, summary data analysis, and broad-based prevention activities. Cases of occupational asthma are identified primarily through physician reports, hospital discharge data, and workers' compensation records.

Occupational asthma can be classified as new onset work-related asthma, reactive airways dysfunction syndrome (RADS), or work-aggravated asthma. Individuals reported with occupational asthma are interviewed to collect demographic, medical, and occupational data. Information is collected to determine the causative agent and job activities related to the asthma case. This information is used to conduct workplace intervention to prevent additional cases of occupational asthma and provide research data on workplace asthmagens.

The New Jersey SENSOR Program identified 165 cases of occupational asthma between the years 1993 to 1997. New onset occupational asthma accounts for 81% of these cases. (Table 1)

Table 1

Number of Occupational Asthma Cases by Classification, New Jersey, 1993-1997

Classification	Total
RADS	46
Occupational Asthma	99
Subtotal New Onset	145
Work-Aggravated	20
Total	165

Cases of occupational asthma were found throughout all industry types with the majority of cases in health services, chemical products, educational services, and food products. (Table 2)

Table 2

Number and Percent of Occupational Asthma Cases by Industry Type, New Jersey, 1993-1997

Industry	Number	Percent
Health Services	25	15.2
Chemical and Allied Products	17	10.3
Educational Services	14	8.5
Food and Kindred Products	13	7.9
Special Trade Contractors	11	6.7
Other	85	51.4
Total	165	100.0

Occupational categories most frequently identified through the asthma surveillance system are shown in Table 3.

Table 3

Number and Percent of Occupational Asthma Cases by Selected Occupational Category, New Jersey, 1993-1997

Occupational Category	Number	Percent
Operators, Fabricators, Laborers	42	25.8
Managerial and Professional Specialty	40	24.5
Technical, Sales and Administrative Support	29	17.8
Precision Production, Craft, and Repair	29	17.8
Other	25	14.1
Total	165	100.0

The most frequent causative agents for both new onset and work-aggravated asthma include indoor air pollutants, chemicals (non-specified), solvents, and diesel exhaust. (Table 4)

Table 4

Number and Percent of Occupational Asthma Cases by Selected Agent, New Jersey, 1993-1997

Agent	New Onset Number	New Onset Percent	WAA Number	WAA Percent
Air Pollutants, Indoors	17	11.7	4	20.0
Chemicals, NOS	12	8.3	4	20.0
Solvents, NOS	8	5.5	2	10.0
Diesel Exhaust	8	5.5	1	5.0
Glutaraldehyde	7	4.8	-	-
Paper Dust	7	4.8	-	-
Other	86	59.4	9	45.0
Total	145	100.0	20	100.0

WAA = Work-Aggravated Asthma NOS = non-specified

Age, race, and sex of the occupational asthma cases are shown in Tables 5, 6, and 7. White males in the 40-49 age group account for the largest percentage of occupational asthma cases.

Table 5

Number and Percent of Occupational Asthma Cases by Age Group, New Jersey, 1993-1997

Age Group	Number	Percent
<20	-	-
20-29	16	9.7
30-39	47	28.5
40-49	59	35.8
50-59	34	20.6
60-65	6	3.6
>65	3	1.8
Total	165	100.0

Table 6

Number and Percent of Occupational Asthma Cases by Race, New Jersey, 1993-1997

Race	Number	Percent
White	121	73.3
Black	26	15.8
Other	13	7.9
Unknown	5	3.0
Total	165	100.0

Table 7

Number and Percent of Occupational Asthma Cases by Sex, New Jersey,1993-1997

Sex	Number	Percent
Male	73	44.2
Female	92	55.8
Total	165	100.0

Conclusions

This report presents data on asthma hospitalization and mortality rates from the New Jersey Asthma Surveillance Project. The initial findings reflect national trends and variation by sex, age, race and ethnicity. This report confirms that asthma is a serious health problem in New Jersey, as it is in the rest of the nation.

This report also highlights the importance of state and local surveillance of asthma outcomes and the continued need for data collection from both existing and potential sources. The NJDHSS is developing an electronic Emergency Department surveillance system that will include data on visits due to asthma.

Information contained in this report was also analyzed at varying levels of geographic specificity, including county and municipal/township levels. This data will be available to relevant and interested government and private organizations in the near future.

The NJDHSS recognizes the need for standardization and compatibility between the States in asthma tracking systems. The New Jersey Department of Health and Senior Services asthma surveillance staff participated in a meeting sponsored by CDC and NIOSH in March 2001 to compare asthma surveillance systems in the States currently funded by these two agencies and to share methodologies for collecting asthma data.

Improving the quality of life of New Jersey residents with asthma is the goal of the NJDHSS. For further information, please contact one of the resources listed in the Resource section of this data report or consult with your primary care physician or other health care professional.

Appendices

New Jersey Department of Health and Senior Services Activities Addressing Asthma

Healthy New Jersey 2010 has an entire chapter dedicated to asthma control (pp 153-157). Objectives include:

- Reduce the age-adjusted death rate from asthma;
- Reduce the annual asthma hospital admission rate;
- Reduce the annual asthma hospital admission rate for children under age five; and,
- Reduce the rate of emergency department visits due to asthma.

Each of these objectives also includes objectives to reduce disparities in these rates between white and ethnic minority populations.

The NJDHSS Office on Minority and Multicultural Health convened a Minority Health Asthma Network between September 1998 and June 1999. The project was targeted to the cities of Newark, New Brunswick, and Trenton. Under the guidance of a Network Advisory Committee, this project produced a fact sheet on asthma in New Jersey, and a resource directory for the three project cities. These documents can be accessed via the Office of Minority and Multicultural Health portion of the Department of Health and Senior Services website. The project also trained 18 residents from the three cities to be community health promoters, providing their neighbors with information about asthma and referral to appropriate screening and treatment resources. This initiative was supported by a grant from the federal Office of Minority Health.

Special Child and Adult Health and Early Intervention Services (SCA/EIS) in the NJDHSS maintains a Special Child Health Services Registry. Any child with a medically diagnosed birth defect or chronic health or developmental problem may be registered. While reporting of birth defects is required under New Jersey State law (NJSA 26:8-40 et seq.), reporting of other special needs conditions, including asthma, is voluntary. Children with medically diagnosed asthma may be registered as children with special health care needs. There are approximately 3,000 children registered with a diagnosis of asthma. Letters, with informational brochures, are sent to the parents/guardians of all newly registered children. These children are also referred to the Special Child Health Services Case Management agency in the county where they reside. These agencies provide case management, referral and follow-up services, as needed. In addition, financial assistance is available for the purchase of prescription drugs for children with cystic fibrosis or chronic pulmonary disease, including asthma, if the family has no medical insurance or other resources for the purchase of drugs.

The New Jersey Department of Health and Senior Services was a founding sponsor of the Pediatric Asthma Coalition of New Jersey, which now has more than 50 member organizations. The Coalition was founded in February 2000 under the auspices of the American Lung Association of New Jersey and the New Jersey Thoracic Society. The Coalition has formed five working groups to develop statewide activities to foster appropriate diagnosis and management of children with asthma through collaboration among health care providers, parents, schools, community-based organizations, and health insurers.

About the Data

Three sources of data were used in this report: the New Jersey sample of the national Behavioral Risk Factor Surveillance System (BRFSS), New Jersey Death Certificates, and the New Jersey Uniform Bill-Patient Summary Discharge files (UB-92).

Sources for national asthma data were the Centers for Disease Control and Prevention Surveillance for Asthma-United States, 1960-1995, the MMWR, 1998: 47 (SS-1): pp 1-28, and the Centers for Disease Control and Prevention WONDER System.

Asthma was defined using the Centers for Disease Control and Prevention Surveillance Case Definition for Asthma: the International Classification of Disease, 9th Revision, code for asthma (ICD-9 493.0 to 493.9) as an underlying cause of death or as the primary diagnosis in the case of hospitalization.

Accurate estimates of asthma incidence and prevalence are difficult due to problems in defining the disease among infants and young people.[8]

Much of the data contained in this report are expressed as rates. A rate is the number of health events in a population or subgroup divided by the number of people in that population or subgroup within a given time period. Hospitalization data are reported per 100,000 population using 1990 Census intercensal estimates. Asthma mortality is reported per 1,000,000 population. Hospitalization rates by county were age-adjusted using the direct method. The 2000 U.S. standard population was used as the standard.

Data were analyzed and reported by calendar year. In data reported by race/ethnicity, Hispanic includes all races, making race/ethnic categories mutually exclusive.

Hospitalization data are based on number of visits not individuals.

Please note that much of the variability among hospitalization rates at the county level and smaller areas of geographic specificity is due to both low numbers of hospitalizations and variable-specific sub-populations.

[8] Nimmagadda, S.R., Evans, R., Allergy: Etiology and Epidemiology, Pediatrics in Review, 20(4), April 1999, p. 111

Table 8

Hospitalization Rates by Sex, New Jersey, 1994-1999 Average

County	Male	Female
New Jersey –All	166	215
Atlantic	245	260
Bergen	93	135
Burlington	108	161
Camden	208	277
Cape May	147	204
Cumberland	149	187
Essex	390	438
Gloucester	90	130
Hudson	234	310
Hunterdon	62	79
Mercer	142	214
Middlesex	143	182
Monmouth	111	163
Morris	74	102
Ocean	109	137
Passaic	226	285
Salem	139	226
Somerset	85	113
Sussex	82	115
Union	164	197
Warren	107	170

Per 100,000 New Jersey residents

Table 9

Hospitalization Rate by Race/Ethnicity, New Jersey, 1994-1999 Average

County	White -NH	Black -NH	Hispanic	Asian -NH
New Jersey –All	83	348	230	43
Atlantic	138	435	349	33
Bergen	83	289	82	40
Burlington	81	216	100	44
Camden	83	339	358	33
Cape May	132	292	307	18
Cumberland	89	200	236	30
Essex	92	458	515	63
Gloucester	30	59	40	14
Hudson	182	225	160	97
Hunterdon	53	278	83	14
Mercer	77	380	273	43
Middlesex	70	231	238	20
Monmouth	83	263	138	30
Morris	43	230	41	18
Ocean	61	211	103	16
Passaic	93	446	288	71
Salem	106	343	255	31
Somerset	60	156	73	15
Sussex	58	245	20	50
Union	77	335	104	48
Warren	111	400	45	42

Per 100,000 New Jersey residents
NH = non-Hispanic

Table 10

Hospitalization Rates by Age, New Jersey, 1994-1999 Average

County	Age <5	Age 5-19	Age 20-64	Age 65+	Age-Adjusted[1]
New Jersey –All	600	180	150	181	191
Atlantic	1068	296	159	153	251
Bergen	318	102	85	166	115
Burlington	309	118	118	147	135
Camden	565	197	214	255	240
Cape May	452	175	140	182	174
Cumberland	520	127	141	156	166
Essex	1600	413	301	273	411
Gloucester	247	105	89	141	110
Hudson	812	257	221	247	273
Hunterdon	204	67	53	96	72
Mercer	516	165	147	176	180
Middlesex	504	156	124	178	164
Monmouth	375	129	109	156	138
Morris	257	76	64	143	90
Ocean	451	140	90	89	126
Passaic	677	228	221	205	252
Salem	528	109	156	244	182
Somerset	298	91	74	127	100
Sussex	256	83	81	118	98
Union	614	170	140	163	182
Warren	246	62	130	239	137

Per 100,000 New Jersey residents

[1] Rates standardized to US 2000 Census

Resource List

For further information about asthma, contact your primary care physician, health care professional, or the following:

Allergy and Asthma Network
Mothers of Asthmatics, Inc.
1-800-588-4872
www.podi.com/healthaanma

American Lung Association (ALA)
National Office
61 Broadway, 6th floor
New York, NY 10006
212-315-8700
800-586-4872
www.lungusa.org

American Lung Association (ALA)
of New Jersey
Pediatric Asthma Coalition
of New Jersey
1600 Route 22 East
Union, NJ 07083
908-687-9340
www.pacnj.org
www.lungusa.org/newjersey

Asthma and Allergy Foundation
of America
1125 15th St., NW
Suite 502
Washington, D.C. 20005
1-800-727-8462
www.aafa.org

National Institutes of Health
National Asthma Education
and Prevention Program
301-251-1222
www.nhlbi.nih.gov

New Jersey Department of Health
and Senior Services
Division of Epidemiology, Environmental
and Occupational Health
Occupational Health Service
P.O. Box 369
Trenton, NJ 08625-0369
609-984-1863
www.state.nj.us/health

New Jersey Department of Health
and Senior Services
Division of Family Health Services
Child and Adolescent Health Program
P.O. Box 364
Trenton, NJ 08625-0364
609-292-5666
www.state.nj.us/health

New Jersey Department of Health
and Senior Services
Office on Minority and
Multicultural Health
P.O. Box 360
Trenton, NJ 08625-0360
609-292-6962
www.state.nj.us/health

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